50X1-HUM

Next 1 Page(s) In Document Denied

50X1-HUM

COUNTRY : USSR

SUBJECT : ARTILLERY COLLECTION: "Certain Questions in the Combat Utilization of Artillery in an Offensive Operation of an Army Being Moved up from the Depth of Operational Deployment"

50X1-HUM

Certain Questions in the Combat Utilization of Artillery in an Offensive Operation of an Army Being Moved up from the Depth of Operational Deployment

The continuous improvement and constant strengthening of defense by our probable enemies, including the possibility of wide-scale employment of weapons of mass destruction by defending troops, are changing conditions in the conduct of an offensive.

The concentration of great masses of troops in limited areas provides the enemy with favorable conditions for the delivery of atomic strikes on them, which could disrupt an offensive operation, or at least cause great losses of personnel and equipment. For this reason, when concentrating a great number of troops in the sector of a breakthrough, it is essential to create conditions which would prevent the enemy from delivering atomic strikes against these troops.

One such condition is surprise. But to achieve surprise under conditions in which the technical capabilities of intelligence are so great, is a most difficult matter. The difficulty of achieving surprise will increase even more as intelligence means improve.

It is possible to achieve surprise by employing a number of measures ensuring effective counteraction to the enemy's modern means of intelligence, and also by finding such means of organizing an offensive which would ensure the maximum degree of concealment of preparations for the operation.

The capacity of troops for rapid maneuver makes it possible to have them dispersed on a broad front in operational depth, and to move them up to the departure area immediately before the start of artillery preparation for an attack and also while it is taking place.

Operations of this sort by the troops create favorable conditions for achieving surprise, and lessen the probability of the main grouping being hit by enemy atomic strikes.

At the same time, when the troops of the army are concentrated in operational depth, there are considerable differences in the organization of an offensive compared with the usual conditions.

Breakthrough of the enemy's prepared defense under these conditions may be carried out by an army of the second echelon (reserve) of the front or by an army joining the complement of the front from the Headquarters (stavka) Reserve. For an army joining the complement of the front from the Headquarters Reserve, conditions of preparation for the operation will be more complicated, because the planning of the operation, the creation of materiel reserves, the working out of coordinated action with adjacent units (soseд), aircraft, and units equipped with atomic ammunition, will have to be carried out during the move and when the troops of the army are in concentration areas.

A large role in the timely preparation of an operation is played by the headquarters of the front, which in accordance with the decision taken has to: organize reconnaissance of the enemy; give instructions to troops defending the sector of the impending breakthrough by the army on engineer preparation in the departure area and on the routes of movement of the troops of the army from concentration areas to the departure area; organize combat against enemy atomic weapons and missiles; meet and deploy the troops in the concentration areas.

The decision for an operation may be taken by the commander of the army either before the troops move up to the concentration areas or when they are in the concentration areas.

The decision of the commander of the army, together with other questions, should determine: measures for delivering a forestalling (uprezhdayushchiy) strike in order to disrupt enemy counterpreparations; the timing for moving artillery up to firing positions; the tasks of artillery and aircraft in supporting the movement of troops to the departure area; the order and sequence of moving troops to the departure area; disposition of the troops in the departure area, as well as routes for moving them up.

A breakthrough of the enemy's defense may be carried out at any time of the day or night. But the moving up of troops from concentration areas will be carried out under nighttime conditions or conditions of poor visibility, which ensures to the greatest degree the secrecy of their approach and occupation of the departure area.

Tasks of the Artillery

The tasks of the artillery, like those of other arms of troops

engaged in an operation, are determined first of all by the aim, missions and nature of the operation, as well as by the capabilities of the artillery itself. The conditions under which the operation is prepared have an important influence on the tasks of the artillery.

It was pointed out above that the offensive will be preceded by moving the troops of the army up to the departure area. Cover for the move of troops up to the departure area is one of the most important tasks of the artillery.

The enemy will endeavor to detect the main grouping of troops of the army, and carry out counterpreparations in order to disrupt the operation. In order to deny the enemy the possibility of disrupting an offensive which is being prepared, the artillery must be ready, together with aircraft, to deliver a forestalling strike.

In defense, in the view of the probable enemies, nearly half the forces and weapons, the main mass of the artillery and the overwhelming majority of weapons of mass destruction are located in the tactical zone, breakthrough of which is one of the complex problems of a modern offensive operation. For breaking through a defense of this kind, artillery preparation for the attack and support of the attack and offensive will be required.

The nature of the operations of troops of the army and the limited time for preparing the operation will determine the methods of preparation by the artillery and the degree and order in which it is called upon for carrying out the tasks mentioned above.

Cover for the movement of troops of the army to the departure area is achieved first of all by striking at the enemy's means of reconnaissance and attack. Taking into consideration that the moving of troops from concentration areas up to the departure area will take place, as a rule, at night, the most dangerous means of enemy reconnaissance will be radar stations.

In the zone of offensive of a combined-arms army, there may be up to 100 to 150 enemy radar stations of various types and purposes. The neutralizing of radar stations blinds the enemy, disrupts control of his aircraft, artillery, especially his antiaircraft artillery, and sharply reduces the effectiveness of the use of means of atomic attack, all of which taken together favors the success of the operation as a whole.

An analysis of the radar system of an enemy field army in defense shows that up to 70 percent of its radar stations are located to a depth of up to 50 kmc, that is, within the zone of artillery fire. This does not mean that the task of neutralizing them should be borne only by the artillery. It is sufficient to say that when the initial data are fully prepared, and depending on the range of fire, it is necessary to call upon from 1 to 3 batteries using from 200 to 600 rounds, in order to neutralize one radar station. In order to neutralize all enemy radar stations in the zone of offensive of an army to a depth of 50 kms, a great quantity of both artillery ammunition and time will be required. For this reason this task should be carried out by the combined efforts of artillery, aircraft, radio-countermeasure resources of units of special designation (spetsialnoye naznacheniye - SPETsNAZ) and diversionary-reconnaissance groups (diversionno-razvedyvatelnaya gruppa).

Depending on the particular situation, it is imperative to determine the most important enemy radiotechnical objectives and to neutralize them as first priority.

During the time of the move of troops of an army to the departure area, the most effective means of reconnaissance of a moving target will be the field artillery radar stations. The American Army uses for this purpose AN/MPQ-10,-12,-22 radar stations, capable of detecting moving tanks (motor vehicles) up to a distance of 18 kms. In all, there may be up to 15 to 18 such stations in the zone of offensive of an army, situated, as a rule, at a distance of 1.5 to 3 kms from the main line of resistance.

No less important objectives for neutralization will also be the radar stations which assist the fire of subunits (units) of atomic artillery, guided missiles, and free rockets and radar stations of the centers (posts) for controlling and guiding tactical aviation. Taking into consideration the existing norms for reinforcement of an enemy army corps with artillery means of atomic attack, there may be up to 20 such stations located at a distance of 8 to 50 kms from the front in the offensive zone of an army.

The order of commitment of the artillery, and the timing and nature of the fire effect for the neutralization of enemy radar stations, will in each case be determined by the actual situation which has arisen. It is advisable to carry out the neutralization

of enemy radar stations, of units (subunits) of artillery means of atomic attack as well as of stations for the detection of moving targets, even before the main grouping of artillery of the army is moved up to firing positions. This task may be given to the defending troops.

In order to carry out effective neutralization of the enemy's radar system and ensure that the departure area is occupied in secrecy, a surprise mass strike using all weapons may be considered before the beginning of the move up by troops of the army.

The employment of various means in order to neutralize and destroy the enemy's radio-technical system will call for centralized control of them on the front (army) level. At the same time the tasks of the various arms of troops must be considered according to their capabilities and tasks in the operation, as well as the order and timing of carrying them out.

For delivering strikes against our troops, the enemy may utilize artillery, aircraft, and pilotless weapons.

Taking into account the new strengths of divisions and existing reinforcement rates, the enemy may have in the zone of offensive of a combined-arms army 3 to 4 batteries and 3 to 5 battalions of 203.2 mm. howitzers, 1 battalion of 280 mm guns, 3 to 4 batteries and 1 battalion of "Honest John" free rockets and 1 or 2 battalions of "Corporal" guided missiles. In all this is 66-98 guns and launchers. When one takes into account the range of fire of this artillery, it becomes evident that the enemy is capable of delivering atomic strikes at the troops of an army when they are still located in the depth of operational deployment. The closer the troops of the army approach the main line of resistance the more enemy capabilities grow because the 203.2 mm howitzers and 280 mm guns can be used for delivering atomic strikes.

The enemy's artillery means of atomic attack, according to established opinion, are to be hit immediately after they are detected. This principle of combatting atomic weapons wholly answers modern requirements, but in a number of cases its application would be disadvantageous, because premature detection by the enemy of the powerful artillery weapons of the advancing forces may jeopardize the element of surprise.

The firing positions of 203.2 mm howitzer, 280 mm gun and "Honest John" free rocket subunits are located 6 to 8 kms from the main line of resistance while those of "Corporal" guided missiles are located at a distance of 30 to 40 kms.

In order to destroy a single enemy atomic piece at a range of 14 kms. when all initial data have been fully prepared, 3600 122 mm. shells would have to be expended. An artillery brigade (54-122 mm. guns) is capable of firing this number of shells in 25 minutes. In order to destroy two or three batteries armed with such weapons, the whole army artillery group would have to be utilized for a prolonged period of time.

It can be seen from this example that artillery using conventional charges is capable of destroying only an insignificant number of the enemy's artillery means of atomic attack. For this reason, the task of destroying and neutralizing means of atomic attack should be carried out by artillery and aircraft using both conventional and atomic warheads. In planning, it is essential to make provision for allotting atomic means for these tasks.

The destruction of enemy means of atomic attack must be carried out bearing in mind the nature of troop operations during the period of preparation for the operation and the capabilities of the artillery. In order not to allow the enemy to deliver atomic strikes, it is essential in each particular case to determine which of these means are most dangerous, and during which period, and on this basis to strike at them in first priority.

For instance, before the main forces leave concentration areas for the departure area, it may be necessary to strike at the enemy's guided missiles and free rockets, atomic ammunition stores and their assembly bases.

Conduct of counterpreparations by the enemy is possible when the main grouping of troops of the army is located in concentration areas, in the departure area, and also when troops of the first echelon of the army are moving up to the departure area. Organizing the disruption of the enemy's counterpreparations is one of the most important measures to be taken in preparing an offensive operation.

The enemy being equipped with modern means of combat, is in a position to carry out counterpreparations throughout the depth of the operational structure of the advancing troops with large scale

use of atomic and chemical weapons and also radioactive substances. The availability of missile and rocket artillery makes it possible to carry out counterpreparations against the troops of an army when they are located in concentration areas. During the period when the troops are located in concentration areas, the disruption of possible enemy counterpreparations must be organized by the headquarters of the front, bringing in the artillery of the defending troops and the artillery of the army that has been moved up to firing positions.

The disruption of enemy counterpreparations is achieved by delivering a massed forestalling strike by artillery and aircraft against the firing positions of the artillery means of atomic attack, the field artillery, command posts, and communications centers, and also by repulsing raids by his aircraft.

In order to disrupt the enemy's counterpreparations, it is essential to bring in reinforcement artillery and army artillery, as well as artillery of the divisions of the first echelon of the army. In some cases the need may arise to bring in artillery, tanks and assault guns of the divisions of the second echelon of the army.

The major part of the artillery of the army should be in readiness to fire even before the troops begin to move up to the departure area.

Artillery preparation for attack is carried out with the aim of effectively neutralizing the enemy's defenses. Conditions under which an operation is prepared and carried out inevitably have a bearing on methods of planning and conducting the fire of the artillery. With the increase in speed and ceiling of fighter and bomber aircraft, their capabilities for neutralizing enemy objectives in the field of combat are decreasing. The tasks of neutralizing the enemy in the first zone and in the tactical and operational depth of his defense fall more and more on the artillery.

The duration of artillery preparation for attack is determined first of all by the quantity of atomic ammunition and the way in which it is used, the nature of the organization of the enemy's defenses, and the quantity of artillery earmarked for neutralizing the enemy in the tactical depth of defense. At the same time, the determination of duration of artillery preparation will also be influenced by the order and timing of moving up troops from the departure area to the line of attack.

If, for instance, during artillery preparation for the attack, the artillery is given the task of covering the move of troops from departure areas 25 to 30 kms away from the enemy's main line of resistance, then the artillery preparation would require about 30 to 40 minutes.

In order that the troops may most fully exploit the results of atomic strikes, the artillery preparation for an attack should be short and powerful.

During the course of artillery preparation for an attack, enemy defenses should be neutralized by a series of powerful strikes (fire concentrations-ognevoy nalet).

The number of fire concentrations is determined by the fire capabilities of the artillery and the number of objectives (targets) to be neutralized by conventional ammunition. The duration of each fire concentration is in turn dependent on the quantity of ammunition required for the neutralization of the objective (target) and the quantity of artillery employed for the neutralization.

The sequence of neutralization of enemy objectives is in each case determined by the particular situation. For instance, if it is essential to safeguard from enemy artillery fire the movement of the troops out of departure areas and to create favorable conditions for combat operations of aircraft, then, at the beginning of the artillery preparation for the attack, it would be advisable to neutralize artillery batteries (including antiaircraft), main observation posts, radar stations, and the enemy's artillery means of atomic attack that have not previously been neutralized.

Therefore, the composition and duration of artillery preparation for an attack will in each case be determined by the particular conditions of the situation, taking into account all relevant factors (condition of the enemy defenses, the number and time of delivery of atomic strikes, availability of artillery in the army, nature of tank operations, terrain, weather, time of day, etc).

The first and subsequent enemy defense zones will be broken through at high speed, which will limit the enemy's capability to deliver atomic strikes and use his reserves. Attacking troops, exploiting the breaches in the enemy defenses created by our atomic strikes, and the intervals between strong points and open flanks, will

endeavor to penetrate his position as deeply as possible. The forward movement of battalions and regiments will often be irregular on the whole front of an advancing division.

Taking into account the nature of the operations of the attacking troops, it must be considered that the main method of artillery support for an attack and offensive in the depth of enemy defenses will be a concentrated and massed artillery fire (planned and unplanned.) A successive concentration of fire and rolling barrage may be employed in particular directions, for instance when breaking through a fortified area.

The planning of artillery support for an attack must be adapted to the operations of each division, therefore the main element of planning should be the divisions artillery staff.

The requirement of an army for artillery during the period of artillery preparation for attack is determined by the nature of enemy defenses and the tasks of the troops of the army, as well as by the tasks being carried out in the zone of offensive of the army by atomic weapons and aircraft, and in each individual case the requirement will differ.

Without going into the question of computing the required density of artillery, as this has been covered in detail in Artillery Information Collections Nos. 42 and 44, we shall assume that, taking into consideration the tasks being carried out by atomic weapons and aircraft, it will be necessary to create a density of artillery of 60 to 70 guns to 1 km of the breakthrough sector. In order to create such a density in a breakthrough sector of 24 kms , it is necessary to have 1440 to 1680 guns. Taking into account the artillery of the troops defending the zone of the forthcoming breakthrough by the army, up to 1200 to 1400 guns will be required during the period of the artillery preparation for the attack.

The above computation shows that in order to carry out the tasks of artillery preparation for an attack, the artillery of the defending troops in the first operational echelon of the front in the breakthrough sector of the army is by no means sufficient, and that it is essential to call on the artillery of the army.

When breaking through prepared enemy defenses, the operational structure of an army will, as a rule, consist of two echelons. When an army has 5 motorized-rifle and 2 tank divisions, of which 3 motorized-

rifle divisions and 1 tank division attack in the first echelon, and the remaining divisions in the second echelon, 786 guns, mortars, and rocket launchers can be used for artillery preparation for the attack. The balance may be made up by calling on reinforcement artillery.

Artillery Reconnaissance

The organization and conduct of artillery reconnaissance under the conditions under review will have marked features of their own. These features are defined by the nature of the preparation for the operation and of the operations of troops, by the artillery's tasks and also by the structure of the enemy's combat formation in defense.

First of all the role of the artillery headquarters of the front increases, as it has to provide the artillery staffs of the army with available reconnaissance data on the enemy and terrain which has been received from the defending troops, from fire-adjusting/reconnaissance (korrektirovochno-razvedyvatelnyy) aircraft, air reconnaissance and from other sources, as well as with information on the availability of an artillery survey grid (artilleriyskaya opornaya set) in areas of impending artillery deployment.

The very limited time for preparation of the operation calls for maximum use of available reconnaissance subunits (units) of the artillery of the army for carrying out reconnaissance of the enemy and amplification of reconnaissance data received from the artillery headquarters of the front. At the same time, for reasons of concealing preparations for the operation, the use of artillery reconnaissance subunits of the army's artillery as well as of fire-adjusting/reconnaissance aircraft should be restricted to the minimum required for detecting an enemy grouping.

As distinct from the conditions when an army prepares an offensive while in direct contact with the enemy, artillery reconnaissance subunits (units) of the army which are moved up for reconnaissance before the artillery occupies firing positions, will have to operate on unfamiliar terrain and at a considerable distance from the artillery staffs. This may make the collection and processing of reconnaissance data and the transmission of it to the artillery staffs more difficult. In order to expedite receipt of reconnaissance data, simplify the work of analysis, processing, and transmission of it to the artillery staffs, it is advisable to organize a collection point in the artillery of the army, which would include officers of

the operations and intelligence sections of the artillery staff of the army. Reconnaissance data, as it comes in and is studied at the collection point, is sent on to the artillery staff of the army, as well as the artillery staffs of the divisions and staffs of army artillery groups. In the case when operations groups move up from artillery headquarters to the departure area, there is no need to create a collection point. The collection and processing of reconnaissance data in that case are carried out by officers of the operations groups.

When carrying out artillery reconnaissance, its main efforts, during preparations for the operation, should be directed at detecting the main objectives (targets) in the enemy positions. The principal ones are, first of all, the location and grouping of the enemy's artillery and mortars, especially of atomic artillery, guided missiles, and free rockets.

Possession by the enemy of radar and television equipment of various designations allows him to determine with sufficient certainty the concentration of our troops in depth and to determine the beginning of their move forward and of their occupation of the departure area, not only by day, but also by night. For this reason, artillery reconnaissance must discover the enemy's ground radar system in time and provide the artillery with the necessary data for its neutralization (destruction).

One of the tasks of no small importance in artillery reconnaissance is the detection of enemy reserves and the possible nature of their operations, and also company defense areas and other objectives, with the aim of ensuring their certain neutralization by atomic weapons, artillery fire, and strikes by aircraft.

The accomplishment by artillery reconnaissance of these tasks is carried out in close cooperation with aerial reconnaissance, reconnaissance of other arms of troops and special troops, as well as with subunits operating in the enemy's rear area.

The organization and planning of artillery reconnaissance by the army artillery staff takes into consideration the tasks being carried out by the artillery reconnaissance means of the defending troops, as planned by the artillery headquarters of the front. In the break-through sector of the army, there may be up to one to one and a half motorized rifle divisions manning defenses. The means of artillery reconnaissance of motorized-rifle divisions are not sufficient to

ensure reconnaissance in the whole breakthrough sector of the army to the depth of the army operation, because their capabilities are limited to a depth of 9 to 10 kms.

In order to ensure reconnaissance of the enemy in the whole sector of breakthrough of the army, the commander of artillery must organize reconnaissance immediately upon receiving instructions of the commander of the army for the preparation for a breakthrough, by moving to the breakthrough sector an army reconnaissance artillery regiment and separate reconnaissance artillery battalions of the army artillery division, and artillery of the Reserve of the Supreme High Command which has been attached to the army.

It is advisable to move up as second priority the reconnaissance subunits of the artillery of divisions of the first echelon of the army, taking into account the readiness of these subunits to carry out reconnaissance before the artillery groups occupy firing positions.

Before the main bulk of the artillery is moved up to firing positions, reconnaissance must be carried out, centralized according to the plan of the army artillery staff.

When organizing reconnaissance during the period of preparation for an offensive, special attention must be paid to the use of camouflage measures to ensure concealment of the work of all means and especially of ground artillery radar stations.

This can be achieved by:

- locating radar stations in positions previously occupied by the stations of the defending troops (main and alternate);
- maintaining the previously established routine of work of radar stations, including the work of stations of the same type on one lettered number of magnetron (na odnom liternom nomere magnetrona);
- carrying out covert tuning of the high-frequency part of the stations, maintaining the time schedule of work (order of work of stations in the course of 24 hours); the work of radars from newly constructed positions must be drastically restricted;
- organizing coordinated operations in the work of sound-ranging subunits and artillery surveillance radar (ARSOM) stations; the work of ARSOM stations should start, in the main, after receiving the target designation (approximate areas of target locations) from sound-ranging subunits, for which purpose reliable communications should be established between sound-ranging subunits and ARSOM

stations;

- the widespread use of roving (kochuyushchiy) radar stations in order to disorientate the enemy's radio reconnaissance. Their positions should, as a rule, be chosen in places away from artillery firing positions and other important objectives in the disposition of our troops;
- selecting several alternate positions for artillery tracking radar (SNAR) and ARSOM stations; both the main and alternate positions of radar stations should be carefully camouflaged, especially from enemy air observation.

For carrying out reconnaissance at night, besides radar means, it is necessary to use reconnaissance artillery stations RAS-1 (Razvedyvatelnaya Artilleriyskaya Stantsiya), stereoscopic rangefinders DSN-0.9 and reconnaissance theodolites RT-2.

Positions of RAS-1 stations must ensure a direct view of the reconnaissance area. Depending on conditions of the terrain and the nature of engineer preparation of the positions, during the day RAS-1 stations may either stay dismantled and camouflaged at the primary positions, or be moved back to waiting positions 1.5 to 2 kms away.

The work of search radars should be restricted during preparation for an offensive because they are easily detected by enemy radio-technical means. It is advisable to bring in the search radars of the RAS-1 stations during this period after receiving target designations from SNAR stations working in the given direction. Uninterrupted reconnaissance of the enemy is achieved by means of the observation device (nablyudatelnyy pribor) of the RAS-1 station working by natural night lighting, as well as by reconnaissance theodolites RT-2 and stereoscopic rangefinders DSN-0.9, which ensure getting a fix of sources of infrared rays.

Reconnaissance of enemy radar stations is carried out by radar reconnaissance batteries equipped with radio direction-finding stations (radiopelengatornaya stantsiya-RPS).

In order to ensure the maximum possible distance of detection, positions of RPS stations are selected on dominating heights, on roofs of buildings, etc, near the main line of resistance of friendly troops.

Data on enemy radars received from RPS stations are checked with those of SPETsNAZ units operating in this direction.

For carrying out aerial reconnaissance for the army, fire-adjusting/reconnaissance aircraft may be attached.

The planning of aerial reconnaissance is carried out by the army artillery staff, based on available resources, their capabilities (photo equipment, combat fatigue of crews, type of aerial photographic film), frequency of sorties of the aircraft (helicopters) of the defending troops, as well as on the tasks being carried out in the army zone by fire-adjusting/reconnaissance aircraft according to the plan of the artillery headquarters of the front.

When allocating fire-adjusting/reconnaissance aircraft, it is essential to make provisions to allot part of the sorties flown (samoleto-vylet) to commanding officers of army artillery groups and commanders of artillery of the divisions for artillery fire adjustment.

When carrying out aerial reconnaissance, primary attention should be paid to the detection of the enemy's artillery means of atomic attack and objectives for delivering atomic strikes. In every case, before delivering atomic strikes, a last-minute reconnaissance (dorazvedka) (by observation and photography) of the objectives selected for striking should be carried out.

Artillery Survey

The basis of artillery survey (topograficheskaya podgotovka artillerii) is the geodetic survey grid (opornaya geodezicheskaya set) which is made by subunits of the topographic services of the front, with a density of one point in 4 to 10 km^2.

But, in a number of cases, a geodetic survey grid of the required density may not be available for the sector of the army breakthrough, and then its creation (compressing) should be carried out by the army with the participation of the topographical resources of the front.

Let us examine the procedure for an artillery survey by an army under the most difficult conditions, when a geodetic survey grid of the required density has not been made by the military-topographic service.

[redacted] 50X1-HUM

Let us assume that the army artillery has at its disposal four topographic batteries and in addition a topographic section (topootdeleniye) of the military-topographic service of the front is operating in the army's zone of offensive.

In the course of one working day, these resources are capable of developing a survey grid with the fixing (zakrepleniye) of 40 to 50 points. The topographic subunits of the army will require up to two or three days to develop a geodetic survey grid with a mean density of one point per 7 km^2 (taking into account the time spent on reconnoitering, reconnaissance of points, organization and planning of work).

When carrying out [several words missing] subunits of the military-topographic service together with topographic subunits of the army, an artillery survey grid with a density of one point per 2 km^2 in the breakthrough sector can be created in two days.

As far as artillery survey for atomic artillery is concerned, it can be limited to the making of a geodetic survey grid. This will shorten the time for developing the artillery survey grid and will ensure a more precise tying in (privyazka) of these types of artillery.

In a number of cases an army topographic group may be formed for carrying out the work of making an artillery survey grid, which will facilitate the organization and work of making a survey grid, formulation of diagrams and catalogues of coordinates for the survey grid, and will also simplify the process of passing on these documents to the artillery staffs.

On the basis of these calculations, topographic subunits of the army artillery together with subunits of the topographic service, can make an artillery survey grid in four to five days.

Up to 24 hours will be required for topographical tying in of artillery firing positions and observation posts on a completely topographical basis.

Therefore, about five to seven days in all will be required for the artillery survey for an army on a completely topographical basis.

Artillery survey for atomic and heavy rocket artillery units

[redacted] 50X1-HUM

[redacted] 50X1-HUM

and subunits is carried out by their own organic topographic platoons from points of the geodetic survey grid, with a subsequent verification of it by the togographic batteries of the army reconnaissance artillery regiment.

Making use of topographic batteries for checking the marking out (proveshivaniye) of the principal directions and the topographical tying in of artillery firing positions and observation posts, can only be done after they have carried out the basic work of creating and developing the artillery survey grid, of tying in observation posts, and posts and positions of reconnaissance subunits.

Photogrammetric and Meteorological Support for the Artillery

Simultaneously with the assigning of tasks, the artillery headquarters of the front provides the artillery staff of the army with all available data on the enemy and terrain, including the previously prepared survey photographic documents (izmeritelnyy fotodokument). But a situation may arise when the artillery headquarters of the front is not in a position to supply the army artillery completely with survey photographic documents. In that case the army artillery staff organizes their preparation with its own resources. With this aim in view, small-scale photographing of the enemy's defenses may be carried out by aircraft of the air army of the fire-directing/reconnaissance aircraft attached to the army.

The army artillery staff, when preparing the operation, must organize repeated aerial photography of the enemy's tactical zone of defense and of its immediate operational depth in the zone of the army offensive, using fire-adjusting/reconnaissance aircraft for this.

The photogrammetric battery of the army reconnaissance artillery regiment is called upon to carry out photogrammetric work. If the work is efficiently and properly organized, the battery is capable of providing the army artillery with the necessary reconnaissance and survey photographic documents within the time limit set for preparation of the operation.

In order to maintain secrecy in preparation for an operation, the meteorological support for the army artillery should be carried out by the meteorological service of the defending troops, which are

in direct contact with the enemy. The meteorological battery of the army reconnaissance artillery regiment should not start working before the artillery preparation for the attack begins.

When the artillery meteorological station of the defending troops nearest to the breakthrough sector of the army is situated at a distance greater than the radius of validity of the meteorological reports, the meteorological support of the army artillery is carried out by the resources of the meteorological battery of the army reconnaissance artillery regiment.

Grouping of Artillery and the Procedure for Moving It up to Firing Positions

As distinct from conditions when an army prepares an offensive operation from a position of direct contact with the enemy, a grouping of artillery under the conditions being examined may be created when the troops are located in concentration areas. The creation of a grouping of artillery in advance makes it possible to organize thoroughly coordinated operations of artillery with infantry and tanks, while still in concentration areas, and to move the artillery up to firing positions in accordance with the operational structure of the troops of the army.

In order to create a grouping, besides organic and reinforcement artillery, the reinforcement artillery of defending large units may be brought in, when they are transferred to army subordination. It is advisable to incorporate the reinforcement artillery of the defending large units into regimental and divisional artillery groups of first echelon divisions of the army to the extent that they occupy firing positions.

Moving up of artillery to firing positions must be carried out according to a single plan, carefully worked out by artillery staff of the army. Occupation of firing positions by the artillery in advance, without suitable camouflage measures, may lead to heavy losses and the discovery by the enemy of the concept of the operation.

This plan should define the timing and order of occupation of firing positions and the routes of movement both for the artillery of the army and for the artillery of the divisions; the time limits for engineer preparation for artillery's combat formations; commandant's (komendantskiy) service; camouflage measures, etc. When determining the sequence of moving up artillery, it is essential to consider the

nature of the operations of the army's troops, the tasks of each artillery group and of the antitank reserve.

Concealment of the preparations for an operation is to a certain extent determined by the period spent by the troops in the departure area. A lengthy stay by the troops in the departure area facilitates enemy reconnaissance and increases their vulnerability to atomic strikes. For this reason, the divisions earmarked for operations in the first operational echelon of the army should not occupy the departure area earlier than 24 hours before the beginning of the offensive or during the night immediately preceding the attack. The moving up of artillery to firing positions under these conditions, will take place so that it is ready to open fire not later than one to two days (sutki) before the start of the offensive.

The following will be the main tasks of the artillery before the start of the offensive: neutralization of the enemy radar system and artillery means of atomic attack, and also the disruption of his possible counterpreparation. In order to carry out these tasks, it will be necessary to move up to firing positions the army artillery group and the divisional artillery groups of the first echelon divisions of the army.

In order to disrupt enemy counterpreparation, depending on the allocated amount of atomic ammunition, artillery subunits of the army special artillery group will also be moved up to firing positions.

In order to cover the move of troops of the first echelon to departure areas, it will be necessary also to move up the antitank reserve of the army, and, if necessary, the antitank reserves of first echelon divisions as well.

It is advisable to locate the antitank reserve of the army 10-15 kms from the enemy's main line of resistance, with preparations being made for maneuver in the directions of possible enemy operations.

It is advisable to move up the heavy rocket artillery and units (subunits) of the atomic artillery to waiting areas located in the vicinity of their firing positions, with the aim of having them ready on time for carrying out the tasks of disrupting enemy counter-preparations.

50X1-HUM

Army antiaircraft artillery groups are moved up to siting areas directly from concentration areas.

The order and timing of moving artillery up from concentration areas to firing positions at night, depend on the quantity and caliber of the artillery in the groups, the number of routes, conditions of roads, time of the year, and meteorological conditions.

It is advisable to move the army artillery group, the army antitank reserve and the divisional artillery groups of the first echelon divisions to the departure area beforehand, before the troops begin to move up.

Regimental artillery groups of the first echelon divisions may be moved up to firing positions during the course of the same night as the troops move up to the departure area. It is advisable, when moving up this artillery along routes intended for other arms of troops, to have it moving at the head of columns of its regiments. Regimental and battalion artillery should, as a rule, move up together with its units (subunits).

The firing positions of artillery earmarked for reinforcement battalions should be selected bearing in mind the direction of the battalions' operations, while observation posts should be located in the vicinity of the observation posts of the commanding officers of the appropriate battalions.

The moving up of artillery to, and its deployment in, firing positions, should be carried out with the observance of all camouflage measures.

Ensuring concealment, together with the careful planning of the moving of artillery up to firing positions can be obtained by a number of active and passive measures. Among these are the following: neutralization of enemy reconnaissance by neutralizing radars and night vision equipment and impeding the operations of enemy reconnaissance aircraft; engineer preparation and camouflage of combat formations of the artillery carried out in advance; reconnoitering and preparation of routes; radar camouflage of shifts of artillery; equipping artillery with night driving devices; organizing the commandant's service, etc.

The most labor-consuming and at the same time important measure is the engineer preparation of artillery firing positions and observation posts. The experience gained from a number of exercises shows that the requirements for engineer preparation of artillery combat formations, in an antiatomic respect, are 2 to 2.5

times greater in forces and means, compared with former conditions. An artillery battalion, with 100 to 150 men allocated for carrying out engineer work, is capable of preparing its combat formation in not less than 4-5 days (sutki). Thus, the engineer preparation of firing positions must be carried out beforehand.

It follows from the above that it is essential to give to the artillery of the defending troops the task of preparing a portion of the firing positions and observation posts for the artillery arriving at the breakthrough sector. Depending on the time allocated for the preparation of the operation, the artillery headquarters of the front must plan the number, order, and time limits for preparing alternate firing positions with the forces and means of the defending troops.

When the army artillery is located 50 to 60 kms from the firing position areas, serious difficulties are encountered in providing forces and means for carrying out engineer work. One should also bear in mind that the artillery of the army will have a limited time for carrying out engineer work, because it can only be started after receiving the mission.

Forces and means of the artillery of the army are used for engineer work according to the plan of the army headquarters. When compiling the plan all measures being carried out for the artillery must be taken into consideration.

As a rule, routes of the divisions prepared by the army are used for moving up the artillery. The order of their use by artillery is laid down by army headquarters while their allocation between divisional and army artillery is laid down by the army artillery staff. At the same time, in order to facilitate the organization of traffic control, it is advisable for each artillery group to be given an independent route.

The reconnoitering of routes is carried out by commanding officers of artillery groups, units, and subunits, during the course of which particular attention is paid to the study of sectors that are difficult to negotiate, turns and downgrades, as well as the approach roads to the firing positions.

For traffic control, the army artillery staff in agreement with army headquarters, organizes a commandant's service (komendantskaya sluzhba) bringing in staff officers and officers of

artillery large units and units.

50X1-HUM

One of the important measures ensuring concealed occupation of firing positions by the artillery is radar camouflage which is carried out by special radiotechnical and engineer resources.

The plan of the army headquarters for radio countermeasures, in accordance with the time limits and set order of moving up artillery to firing positions, should provide for the neutralization of the enemy's radar system by artillery of the defending troops, aircraft and the means of SPETSNAZ units, as well as the placing of antiradar camouflage on the sectors of the routes covered by enemy radars.

Organization and Planning of Combat Operations of the Artillery

A special feature of the organization and planning of combat operations of the artillery is the fact that they are carried out, as a rule, while the troops of the army are still in concentration areas and the reinforcement artillery has not yet arrived. This greatly influences the volume and methods of work of the commander of artillery of the army and his staff.

When planning combat operations of the artillery, special attention should be paid to such questions as:

- measures for disrupting the enemy's counterpreparations which should envisage: which artillery of the army is used to carry out this task and during what period; when and how this artillery will be moved up to firing positions;
- organization of artillery reconnaissance with a determination of the subunits (units) of artillery reconnaissance for carrying out reconnaissance of the enemy and the timing of their deployment, as well as the tasks which have to be carried out for the artillery by combined-arms reconnaissance, with the object of detecting targets for destruction by atomic weapons and artillery fire;
- order of moving up artillery to firing positions, with a determination of timing and sequence of moving up the army special artillery group, army artillery group, antitank reserves of the army, divisional and regimental artillery groups; time limits for carrying out engineer preparation of firing positions and observation points, posts and positions for artillery reconnaissance subunits; the required number of routes, their preparation and allocation; measures for

50X1-HUM

preparing artillery to move by night, commandant's service, and traffic control;

- ensuring the move of artillery to firing positions and of the troops to the departure area, bearing in mind the fire means and objectives of the enemy which are most dangerous during that period; timing and order of delivering a strike at these objectives by artillery and atomic weapons, depending on the atomic resources of the army and the capabilities of aircraft; the timing of the move of the artillery and the main grouping of troops of the army to the departure area;
- antiaircraft artillery cover, defining the main objectives of the cover for troops of the army located in concentration areas, means and period of their cover; distribution and grouping of antiaircraft artillery; order of cover for artillery, especially atomic and heavy rocket artillery, during the move forward and at firing positions, as well as for the troops of the main grouping of the army during the move forward to the departure area and in the departure area.

The time taken and the level of completeness in planning the combat operations of the artillery of the army will be determined by the availability of reconnaissance data on the enemy and the nature of deployment of the artillery into combat formation.

In preparing an operation when the troops are not in direct contact with the enemy, study of the terrain and of the enemy acquires particular importance. In this connection it is most important for commanders of artillery and commanding officers of all elements to carry out independent reconnoitering (rekognostsirovka) besides the reconnoitering done jointly with combined-arms commanders, with the object of on-the-spot clarification of the artillery's tasks, areas for firing positions and observation posts, routes of movement, reconnaissance measures, artillery survey, and engineer preparation.

When time is limited, and also in order to satisfy the requirements of secrecy in preparing for the operation, it is advisable to carry out the reconnoitering simultaneously with several reconnoitering groups, which may be headed by the commander of artillery of the army, the deputy commander of artillery, the chief of the operations section, or the chief of the artillery staff of the army.

50X1-HUM

50X1-HUM

All the main questions relating to the combat utilization of artillery in a forthcoming operation should, in principle, be resolved during the course of the reconnoitering by the commander of the army. With this aim, the plan for reconnoitering should be worked out by the headquarters of the army with the participation of the artillery staff of the army. The plan should deal with the main questions subject to clarification on the spot, namely measures for disrupting enemy counterpreparations, tasks of the artillery during the period of artillery preparation for the attack, and artillery support for the attack and offensive in the depth of the enemy defense; the clarification of artillery firing position areas and observation posts; clarification of the timing and order of moving artillery up to firing positions (which routes are selected for artillery and for what period, order of engineer preparation of routes for the artillery, organization of commandant's service), etc.

Tasks of the artillery should be assigned in advance to ensure that the artillery is ready to conduct fire on time.

This may be achieved by giving subordinates a number of tasks even before the decision of the commander of the army. The following are examples of such tasks: data on the enemy, quantity of artillery being allotted for reinforcement of the divisions; areas selected for firing positions and observation posts; the planned order of moving artillery up to firing positions; allocation of routes of movement and the method of organizing the commandant's service; time limits for engineer preparation of combat formations and artillery survey; tasks of the artillery during the period of preparation for the operation and the limit of ammunition to be issued.

After receiving these data, commanders of artillery of the divisions and commanding officers of artillery groups are in a position to plan and organize reconnaissance, artillery survey, and engineer work for the combat formations of the artillery.

After the decision of the commander of the army, the artillery staff of the army should clarify the tasks previously assigned and assign tasks on other problems to the artillery staffs of the divisions, as they are worked out, which will permit them to plan the combat operations and fire of the artillery parallel with the work being done by the artillery staff of the army.

Speedy and correct communication of tasks and rendering of assistance to subordinates in the organization of combat operations

50X1-HUM

50X1-HUM

of the artillery may best be achieved by visits to the troops by officers from the artillery staff of the army, whose mission must be assigned personally either by the commander of artillery of the army or the chief of staff.

The Combat Utilization of Antiaircraft Artillery

The task of the organic antiaircraft defense is to combat enemy aircraft and pilotless weapons, including missiles. The success of an offensive operation as a whole depends largely on the successful performance of this task.

Combat against an air enemy is now carried out by antiaircraft artillery (tube and missile), fighter aircraft, and radio countermeasures. With the introduction, into the organic antiaircraft defense, of missiles, it is anticipated that the main means of antiaircraft defense of troops will be antiaircraft guided missiles, and they will also be the means of antimissile defense.

Without touching on the whole complex of measures connected with organic antiaircraft defense, let us examine some of the questions of the combat utilization of antiaircraft artillery, as now organized, during the preparation for an offensive operation of an army which is being moved up from the depth of operational deployment, bearing in mind that the combat utilization of antiaircraft artillery during the course of an operation has been examined in previous issues of the Artillery Information Collection.

During the course of preparation for an operation, antiaircraft artillery will have to carry out the antiaircraft defense of the unloading and concentration of the troops of the army, their movement to the departure area, and in the departure area.

Large units and units of the army may come into the area of the front either by their own means or by rail. In the latter case each division will, as a rule, be allocated 2 or 3 unloading stations and unloading platforms situated at a considerable distance from each other. Thus, an army may be allocated up to 20 stations and unloading platforms on different railway routes. Depending on the capabilities of the rail and road networks in the zone of the front, the number of such stations will vary in each particular case.

After unloading, the large units of the army are concentrated

50X1-HUM

50X1-HUM

in areas (there may be 8 to 10 of them) 50 to 60 kms from the main line of resistance, and sometimes further. The size of each of these areas may be in the neighborhood of 30 to 100 sq. kms with the concentration areas of the large units up to 20-30 kms away from each other. Every large unit located in a concentration area will need reliable antiaircraft artillery cover. Besides, the army will also need cover for: the command post, railheads, areas of deployment of artillery, especially atomic and heavy rocket artillery, etc.

Prior to the occupation of the departure area by troops it will also be necessary to cover the main grouping of artillery at firing positions and large units of the army on routes of movement.

After occupation of the departure area, cover will be needed mainly for: divisions of the first and second echelons, reserves of the army, the command post, railheads, water crossings, depots, etc.

Thus, when preparing an offensive operation, cover will be required for a considerable number of objectives whose operational-tactical significance will differ at various times.

Antiaircraft defense of railway junctions, unloading stations, and particularly important sectors of railway lines and motor vehicle roads is carried out by divisional and army antiaircraft artillery. Antiaircraft artillery of the front may also be brought in for these purposes.

The organic antiaircraft artillery of the army must arrive at the unloading stations before the large units to be covered (by the first echelons), so it will be ready to provide cover by the time the main forces of the large units arrive.

It is advisable to bring in the tube antiaircraft artillery of the Reserve of the Supreme High Command (Rezerv Verkhovnogo Glavno - komandovaniya-RVGK) and subunits of antiaircraft guided missiles designated for reinforcing the cover of the troops of the army, in order to cover important railway stations and junctions while large units of the army are unloading at them.

However, all antiaircraft artillery attached to the army cannot be brought in to carry out these tasks, because in this case it would not be able to move its base of supply to the concentration areas in time and cover the troops there. In such cases it is obviously

50X1-HUM

50X1-HUM

advisable to detail individual regiments of tube and missile antiaircraft artillery to provide cover for the most important railway stations and junctions, the object being that they could in the future, depending on the situation (the period of time the troops stay in concentration areas, the order of their move to the departure area and so on) be employed in covering the troops of the army in concentration areas, on the routes of movement and at the departure area, or else for covering objectives in the operational rear (railheads, bases, etc).

When determining the quantity of antiaircraft artillery required for providing cover for unloading stations, it is essential to take into account that cover for a portion of the large railway stations and junctions may be provided by the Antiaircraft Defense of the Country.

If several units of tube antiaircraft artillery are used to provide cover for railway junctions and, particularly, unloading stations, then, in order to achieve centralized control of them, it is, as a rule, necessary to create antiaircraft artillery groups.

The antiaircraft defense of troops of the army in concentration areas, in the departure area and during the course of an offensive operation is organized according to the decision of the commander of the army.

The basic principle in the combat utilization of antiaircraft artillery (tube and missile) is its massed use for covering the main forces of the army and the objectives of the operational rear. The question of centralizing control of the fire of antiaircraft artillery, as experience shows, may, in the main, be decided at the antiaircraft artillery group level, or, when there is a complicated air situation, at the antiaircraft artillery regiment level.

Below are given some data obtained during an exercise in the Baltic Military District.

Table 1 shows the distances to detected targets at the moment of entering the data on the plotting boards of the command-observation post of the group (regiment), from antiaircraft artillery reconnaissance and target designation stations. The limit of assignment of missions to antiaircraft artillery was 80 kms from its combat formations.

50X1-HUM

50X1-HUM

Table 1

Distances of detection, in kms.	up to 30	30 to 40	40 to 60	60 to 80	80 to 100	100 to 120	over 120
Number of targets detected	11	8	14	11	7	5	1

It will be seen from the table that of 67 [sic, 57] targets, only 24, or 36 [sic, 42] percent, were detected at a distance of 60 kms and over. If one considers that a certain amount of time will be required for the decision to open fire to be made at the command-observation post, it will become clear that it will not always be possible to centralize the control of fire, even at the group (regiment) level.

Moreover, the difficulty of assessing the air situation and possible changes of flight routes of air targets will often compel the commanding officer of the group (regiment) to change his decision, which may lead to delays in opening fire. For this reason, the control of antiaircraft artillery fire will, in certain cases, be carried out at the regiment (battery) level.

One of the factors which greatly influences the centralization of control of antiaircraft artillery fire is that of communications. When organizing communications in an antiaircraft artillery group (regiment) it should be kept in mind that the armies of our probable enemies have a considerable quantity of special means for creating interference in the work of our radio communications, and that this interference may be so great as to make it impossible to use radio communications in certain directions.

For this reason, it is always essential to endeavor to protect radio communications from interference and whenever possible to organize reliable wire communications parallel with radio communications. This conclusion comes from the experience of organizing communications and control of fire in an exercise, during the course of which, at

certain periods, the radio communications of antiaircraft artillery groups (regiments) were completely neutralized, as a result of which commanding officers of groups (regiments) lost control of their own units (subunits) and the control of fire was carried out at battery level or, at best, at regiment level.

From the experience of this and a number of other exercises, certain preliminary conclusions can be drawn on the possibility of centralizing the control of antiaircraft artillery and of its fire at the army level.

With the existing means of reconnaissance of the air enemy, communications and control of fire, centralized control of antiaircraft artillery at the army level can be achieved only in such aspects as operational camouflage, maneuver of large units (units), ensuring the security of the operations of friendly aircraft by communicating their flight routes, material-technical support of the antiaircraft artillery large units (units) attached to the army, and meteorological support, as well as instructions on the organization of coordinated operations with other means of the antiaircraft defense.

Experience shows that well-timed opening of fire by the antiaircraft artillery which is covering troops and installations of the operational rear may be achieved, provided there is continual reconnaissance of the air enemy and constant readiness of the radar system. Nevertheless, it should be borne in mind, that the simultaneous operation of all radars of the antiaircraft artillery both in concentration areas and the departure area, may, if detected by the enemy, lead to the discovery of the grouping of the antiaircraft artillery and consequently of the grouping of the army.

In order to achieve secrecy, the number of reconnaissance and target designation stations at No. 1 readiness (gotovnost No. 1) should be severely restricted. Stations located in previously occupied positions should be brought up to No. 1 readiness first.

Besides, it is essential to make provisions for radio and radar camouflage. These could be the following:

- making use, for conducting reconnaissance of the air enemy, of radars belonging to neighboring and nearby units and large units of the PVO of the Country;
- working of a part of gun-laying radars, before the appearance of the target, without raising the high voltage;

- complete or partial restriction of radio communications, with a switching over to operation only on wire means;
- disorientation of the enemy radar system by creating interference on his radar stations.

The ability of the antiaircraft artillery to open fire at extreme range depends on a number of factors, first of all on the detection of an air target in good time and on the state of readiness of the antiaircraft artillery itself.

Computations and experimental data from exercises show that with the existing radar means for detecting an air enemy, it is possible to establish certain zone boundaries within which antiaircraft artillery should be in a certain state of readiness. For instance, antiaircraft artillery located in a zone, whose rear boundary is 50 to 60 kms from the main line of resistance should be at No. 1 readiness, in a zone from 60 to 150 kms in depth, at No. 2 readiness, and in a zone 150 kms and more in depth, at No. 3 readiness.

The data given above under the following conditions lead to:

- the antiaircraft artillery in the No. 1 readiness zone carries out independent reconnaissance of the air enemy and warning (at gun-laying stations, the high voltage may be switched off until combat operations begin);
- reconnaissance of the air enemy and warning in the No. 2 readiness zone is carried out by the nearest radar posts of the PVO, which are located ahead of antiaircraft artillery siting areas, as well as by reconnaissance and target designation stations of the antiaircraft artillery;
- in the No. 3 readiness zone warning for the antiaircraft artillery concerning the air enemy is given by the main PVO post of the army;
- the nearest enemy airfields are located 70 to 80 kms from the main line of resistance of our troops.

The depths of the zones, as well as their distances from the line of contact with the enemy, may vary depending on the distance to the nearest enemy airfields, the speed and ceiling of his aircraft, on the tactical-technical data of the antiaircraft artillery and of the means of reconnaissance and control of fire, on the means of warning, and on the time spent on preparation for fire. For this reason, in order to assign tasks properly to the antiaircraft artillery and determine the required degree of its readiness, it is

50X1-HUM

50X1-HUM

necessary in each particular case to make computations and an analysis of the air enemy and of our own capabilities.

It does not follow from what has been said that, for instance, in a No. 1 readiness zone, all the antiaircraft artillery should be continually at No. 1 readiness, because this is a great strain on personnel, and it is impossible to have artillery equipment and radar stations working 24 hours a day.

In each particular case, the commanding officer who organizes the antiaircraft defense must decide what quantity of antiaircraft artillery in which zone should be at any given state of readiness. It should be borne in mind that part of the antiaircraft artillery in zones of Nos. 2 and 3 should be kept at a higher state of readiness.

It is quite obvious that when antiaircraft large units (units) are moved from one zone to another, the states of readiness laid down for them will change.

The combat allocation and grouping of antiaircraft artillery in an offensive operation of an army must:

- ensure reliable cover for the main grouping of troops of the army and the most important objectives of the operational rear;
- create favorable conditions for the maneuver and control of the antiaircraft artillery during the course of the operation with the object of massing its fire to cover troops carrying out the main task of the army;
- ensure coordinated action between antiaircraft artillery and other means of PVO.

Under modern conditions an army may be reinforced by 1 or 2 antiaircraft artillery divisions and 1 or 2 antiaircraft guided missile regiments.

In this case divisional antiaircraft artillery groups are created in the divisions, made up of organic and attached regiments of tube antiaircraft artillery, principally small caliber.

Tube antiaircraft artillery of medium caliber is mainly used for the creation of army antiaircraft artillery groups. It is advisable for these groups, as a rule, to be made up of 2 or 3 antiaircraft artillery regiments.

When troops are located in concentration areas, the main forces of army and attached antiaircraft artillery should be used to provide cover for the troops designated for operations in the main grouping of the army, as well as cover for the most important objectives in the operational rear, which ensures the accumulation of material means for carrying out the forthcoming operation.

At the departure area, the main forces of army and attached antiaircraft artillery should be used for providing cover for divisions of the first echelon and the army artillery group (armeyskaya artilleriyskaya gruppa - AAG). For strengthening cover for divisions of the second echelon, one or two medium caliber antiaircraft artillery regiments may be detailed.

It is advisable to carry out the allocation of attached antiaircraft artillery for strengthening the cover of first and second echelon divisions of the army while they are located in concentration areas, because the transfer of antiaircraft artillery from the first echelon to the second during the course of the operation may create serious difficulties.

For covering the command post (komandnyy punkt-KP) of the army and the most important objectives of the operational rear, and also for providing cover for missile artillery, it is essential to detail at least one regiment of tube and sometimes also of missile antiaircraft artillery for each objective.

The change of tasks of army large units during the preparation and during the course of the operation, and hence the appearance of new objectives requiring cover, will always create the necessity of maneuvering antiaircraft artillery, and naturally the original grouping of antiaircraft artillery will not remain unchanged.

When troops of the army are being moved up to the departure area and when they occupy the departure area, the combat distribution and grouping of antiaircraft artillery will not, as a rule, change to any great extent.

The greatest volume of tasks will be carried out by antiaircraft artillery at the start of the movement of the troops to the departure area, because during that period, besides cover for troops in concentration areas, cover will also have to be provided for the main grouping of artillery at firing positions and the troops on the march.

Bearing in mind that the deployment of antiaircraft artillery and preparations for fire require a considerable period of time, its move to the departure areas should be carried out even before the troops start to move up.

Army antiaircraft artillery groups, covering first echelon divisions of the army and principally made up of medium caliber antiaircraft artillery regiments, are, as a rule, moved to the departure area before the divisions start to move forward from concentration areas, so as to be able to provide cover at the departure area, first for the artillery and later for the divisions. Depending on the situation, they may start moving up either wholly or partially at the same time as the ground artillery or a little before. In either case, the antiaircraft artillery groups must be ready to open fire by the start of the move of the divisions to the departure area.

Depending on the situation, it is also possible to move in advance to the departure area some of the antiaircraft regiments attached for reinforcing the divisions and armed with 57 mm anti-aircraft guns with gun-laying radar (stantsiya orudiynoy navodki-SON) and antiaircraft directors (pribor upravleniya artilleriyskim ognem-PUAZO).

In that case the antiaircraft artillery cover of divisions on routes of movement is provided by their organic antiaircraft regiments, as well as the antiaircraft artillery deployed to provide cover for troops moving through or across river crossings, gorges, defiles, and other narrow places on the routes. Later, after completing the defined tasks, this antiaircraft artillery joins the army (divisional) antiaircraft artillery groups. Depending on the situation, it may join them either when the troops are in the departure area or during the course of the operation.

In this way, at the beginning, or even before the beginning of the movement of troops forward from concentration areas, part of the divisional (army) antiaircraft artillery groups will be broken up and will be recreated in the departure area or during the course of the operation.

However, this should not weaken the continuous cover of troops and interfere with the control of antiaircraft artillery.

In view of the fact that favorable conditions are created for

fighter aircraft to intercept enemy aircraft over areas away from the main line of resistance, their ability to combat the air enemy will increase, which, to a certain extent, will make up for the deficiencies connected with the weakening of antiaircraft artillery cover for troops in these areas.

For covering troops and objectives of the rear, organic antiaircraft missile complexes amalgamated into antiaircraft missile regiments (zenitnyy raketnyy polk-zenrap) can be used. An antiaircraft missile regiment has a combat formation consisting of antiaircraft missile battalion firing positions, locations of the technical battalion, and the command post of the regiment. Firing positions of antiaircraft missile battalions are located at such a distance from the enemy's main line of resistance to ensure not only the concealment of their location from observation by the ground enemy, but also their capability of destroying air targets on approaches to the troops (objectives) being given cover.

The intervals between firing positions of antiaircraft missile battalions should ensure their close mutual fire support and mutual cover. The position of the technical battalion should be within the combat formation of the antiaircraft missile regiment in an area providing camouflage and convenient approach roads.

The commanding officer for an antiaircraft missile regiment may implement centralized fire control of his battalions, but each battalion may fire independently.

The inclusion of antiaircraft missile regiments in groups of tube antiaircraft artillery is not advisable, because it will render the control of groups more difficult and will limit the effective use of antiaircraft missile complexes. The sharp differences in the properties, capabilities, nature, and scale of operations of antiaircraft missile complexes, from tube antiaircraft artillery complexes, result in the work of a commanding officer and staff of such a mixed group, in the organization of reconnaissance of the air enemy, processing air situation data, allocation of targets and control of movement of subunits, becoming practically impossible during the course of an operation.

It is advisable to carry out movement of antiaircraft missile complexes during the course of an offensive operation of an army by battalions, so as to provide cover for advancing troops on the most important lines (when repelling counterstrikes, when the second

50X1-HUM

50X1-HUM

echelon of the army is being committed to battle, when forcing water obstacles, etc).

Under modern conditions, with the limited capabilities of fighter aircraft in combat against enemy air targets over a zone of terrain whose rear boundary may be up to 50 to 60 kms from the line of contact of the troops, the main brunt of combat with the air enemy in covering troops and objectives of the operational rear will fall on the antiaircraft artillery.

The propositions set out in this article on certain questions in the combat utilization of artillery, including antiaircraft, do not exhaust all the possible alternatives. The article basically aims at establishing the most acceptable forms and methods of artillery preparation and planning of artillery fire in an offensive operation by an army moving from the depth of operational deployment. Changes in conditions of the situation, the perfection of existing, and appearance of new, means of combat and means of control will lead to the necessity for finding other methods and means of preparing artillery to carry out its tasks.

Ministry of Defense of the USSR

Artillery Headquarters

Information Collection of the Artillery

No. 45

Military Publishing House

Ministry of Defense of the USSR

Moscow - 1958

In the present Collection are published four articles: "Some Questions of Combat Utilization of Artillery in an Offensive Operation of an Army being Moved up from the Depth of Operational Deployment"; "From the Experience of Command-Staff Exercises"; "Some Special Features of Divisional Artillery Operations During a Night Offensive"; "Cooperation Between Artillery and Tanks in an Offensive Operation of a Tank Division and Motorized Rifle Division".

The first article examines the combat use of field and antiaircraft (tube, missile) artillery mainly during preparation for and the beginning of an operation, the organization and planning of artillery reconnaissance; topographical preparation; photogrammetric and meteorological support for the combat operations of artillery.

In the second article certain data are published, based on the experience of the work of front and army artillery staffs during command-staff exercises carried out in 1957.

The third article examines special features of preparing artillery for night action when breaching a prepared defense of the enemy. The article also deals with the following: the organization and conduct of artillery reconnaissance; the special features of an artillery grouping; special features of the organization and planning of artillery operations; the control of artillery fire, and the organization of illumination.

The fourth article examines: the basis of organizing cooperation between artillery and tanks in an offensive battle of a tank division and motorized-rifle division; artillery support of tanks in an offensive battle; making use of tanks for firing from concealed fire positions; organization of the control of artillery and its fire; methods for maintaining cooperation between artillery and tanks during the course of a battle.

When using this Collection it is necessary to bear in mind that in a number of scientific papers and in some draft manuals and instructions prepared for publication, the term "artillery preparation for an assault" is replaced by the term "artillery preparation for an assault and offensive in the depth of the enemy defense". This question has not yet been finally settled, so the old terminology is used in the present Collection.

50X1-HUM

50X1-HUM

The following took part in the preparation of the articles of this Collection: Candidate of Military Sciences, Colonel Shkarubskiy, P.F., Colonels Pavlov, M.A., Kabachenskiy, I.K., Kotelkin, V.A., Sidorov, V.A., Zverev V.Ya., Zakharov, I.S., Bogdanov, P.A.; Lt. Colonel Dolgov, P.A., and Candidate of Military Sciences Colonel Ponomarev, A.P. 50X1-HUM

The collection is intended for generals and officers from commander of an artillery division (separate artillery brigades) upward.

The artillery staff requests that generals and officers forward their comments concerning the contents of the present Collection.

Responsible Editor for the Collection

Colonel-General of Artillery

KARIOFILLI, G.S.

The Collection contains a total of 76 numbered pages.

50X1-HUM